



**U.S. Department of the Interior**

Bureau of Land Management  
Rock Springs Field Office

October 2000



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**Decision Record and Finding of No Significant  
Impact, Vermillion Basin Natural Gas Exploration  
and Development Project**

## MISSION STATEMENT

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

WY-040-EA00-094



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Rock Springs Field Office  
280 Highway 191 North  
Rock Springs, Wyoming 82901-3447

1792 (040)  
Vermillion Basin

October 30, 2000

Dear Reader:

The Bureau of Land Management (BLM) is providing you a copy of the attached Decision Record for your information and use. The Decision Record identifies BLM's decision, explains the rationale for reaching the decision, and includes the proponents' committed measures and additional mitigation requirements for the Vermillion Basin Natural Gas Exploration and Development Project.

On August 9, 2000, the BLM released the *Environmental Assessment for the Vermillion Basin Natural Gas Exploration and Development Project*. The environmental assessment was prepared pursuant to the National Environmental Policy Act, other regulations, and statutes to fully disclose the potential environmental impacts of the alternatives (Proposed Action and No Action alternatives) and to solicit public comment on them. The assessment also identified additional mitigation measures to further mitigate potential impacts.

A copy of this decision has been sent to governmental entities, individuals, and organizations who commented on this project or have expressed an interest in mineral-related activities proposed on public lands. BLM wishes to thank those individuals and organizations who provided input during this analysis process. Your input has been essential in assuring issues important to you were fully considered. If you have questions regarding this decision, please contact Teri Deakins at 307-352-0211.

Sincerely,

Assistant Field Manager

Attachment

**DECISION RECORD AND  
FINDING OF NO SIGNIFICANT IMPACT,  
VERMILLION BASIN NATURAL GAS  
EXPLORATION AND DEVELOPMENT PROJECT**

**Bureau of Land Management  
Rock Springs Field Office  
Rock Springs, Wyoming**

**October 2000**

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**Decision Record and  
Finding of No Significant Impact,  
Vermillion Basin Natural Gas  
Exploration and Development Project**

**Introduction**

Wexpro Company, Questar Exploration and Production Company, Marathon Oil Company, Basin Exploration, and other operators (collectively referred to as Operators) notified the Bureau of Land Management (BLM), Rock Springs Field Office of their intention to expand natural gas exploration and production of their oil and gas leases in the Vermillion Basin area (Map 1). The Vermillion Basin project area (VBPA) encompasses 92,490 acres located approximately 45 mi southeast of Rock Springs, in south-central Sweetwater County, Wyoming (T12-14N, R99-101W). The area is accessed via Wyoming State Highway 430, Sweetwater County Roads 4-19 and 4-25, and other existing field access roads. The VBPA has experienced drilling and production since the 1940s in portions of the Canyon Creek, Trail, Pioneer, Kinney, and Kinney Rim Units.

The majority of the surface and subsurface estate contained in the VBPA are public lands managed by the BLM (approximately 93%). Private or state surface and/or subsurface estate makes up the remaining 7% of the lands found in the area.

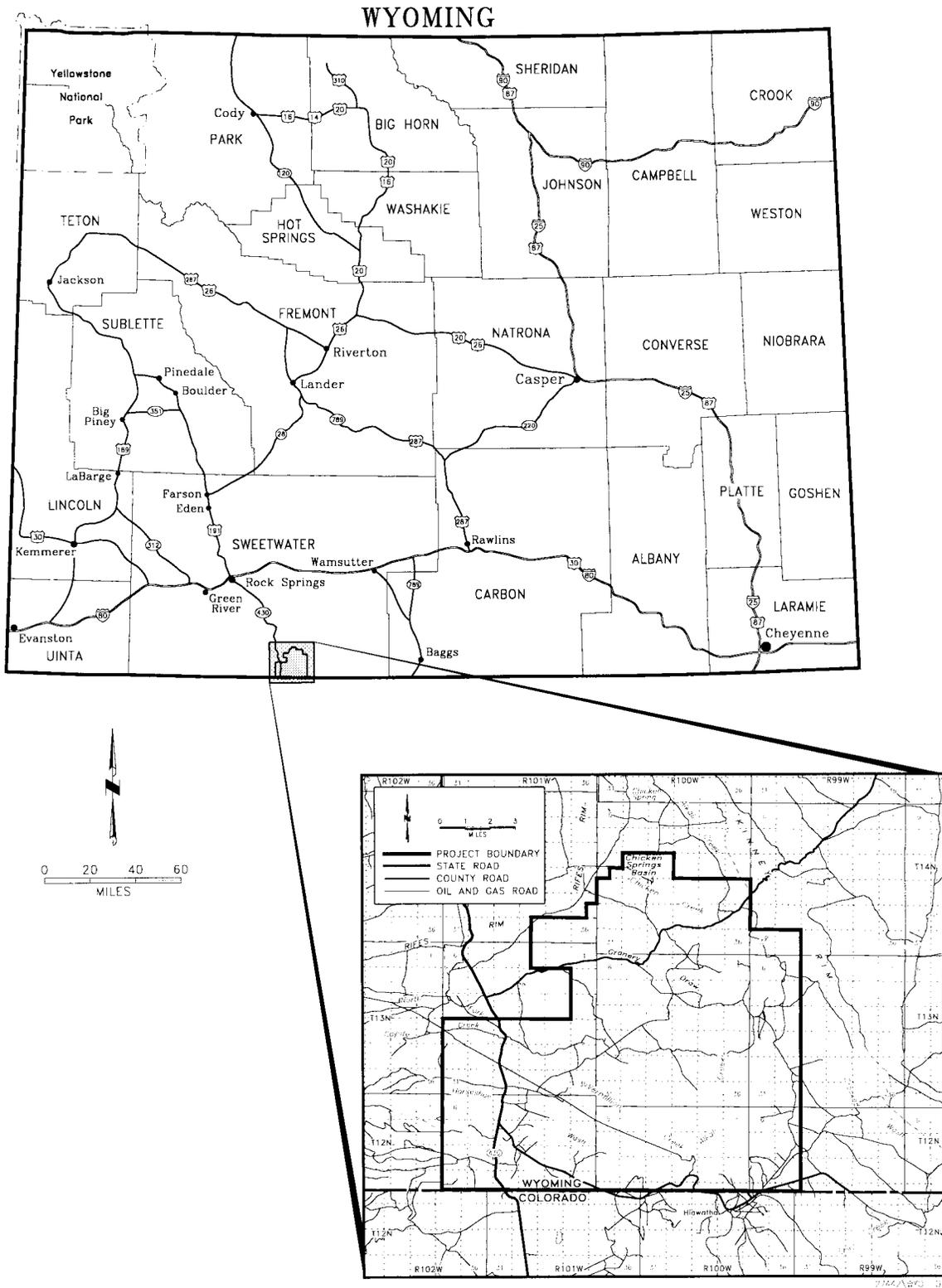
**Alternatives Considered**

The *Environmental Assessment (EA) for the Vermillion Basin Natural Gas Exploration and Development Project* analyzed two alternatives. Under the Proposed Action, Operators propose to drill up to a total of 56 additional wells in the Vermillion Basin area, including three to eight exploratory wells and 48 to 53 production wells. Well densities would not exceed 16 well locations per section (40-acre spacing). Approximately 50% of these wells would be drilled during a 5-year period within known producing areas, with the balance of wells being dependent upon the success of the exploratory wells and being developed over a 10-20 year period. In addition to the wells and related production equipment, Operators propose the development of associated facilities including up to 28 mi of new access roads and adjacent pipelines, additional compression located either at well sites or existing compressor stations, and one or more gravel pits. Project life is expected to be approximately 50 years.

Under the No Action Alternative, BLM analyzed the impacts associated with BLM denial of the Operator's Proposed Action for natural gas development on federal lands within the VBPA. This alternative also provided a benchmark for comparison with the environmental effects of the Proposed Action.

Several other alternatives were considered but rejected due to economic, environmental, or legal reasons. These alternatives included differing well location densities, varying numbers of wells, directional drilling, and the exclusion of development on all public lands within the VBPA.

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Map 1. Location of the Vermillion Basin Project Area, Sweetwater County, Wyoming, 2000.

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## Decision

Based upon the analysis of the potential environmental impacts described in the EA and, in consideration of the public, industry, and governmental agency comments received during the environmental analysis process, the BLM approves the Operators' Proposed Action as described in Chapter 2 of the EA and associated errata (see Appendix A) for the exploration and development of up to 56 natural gas wells and associated facilities within the VBPA (Map 2). This decision incorporates the Operator-committed measures identified in Appendix B (as modified), and certain additional measures identified in Appendix C of this Decision Record.

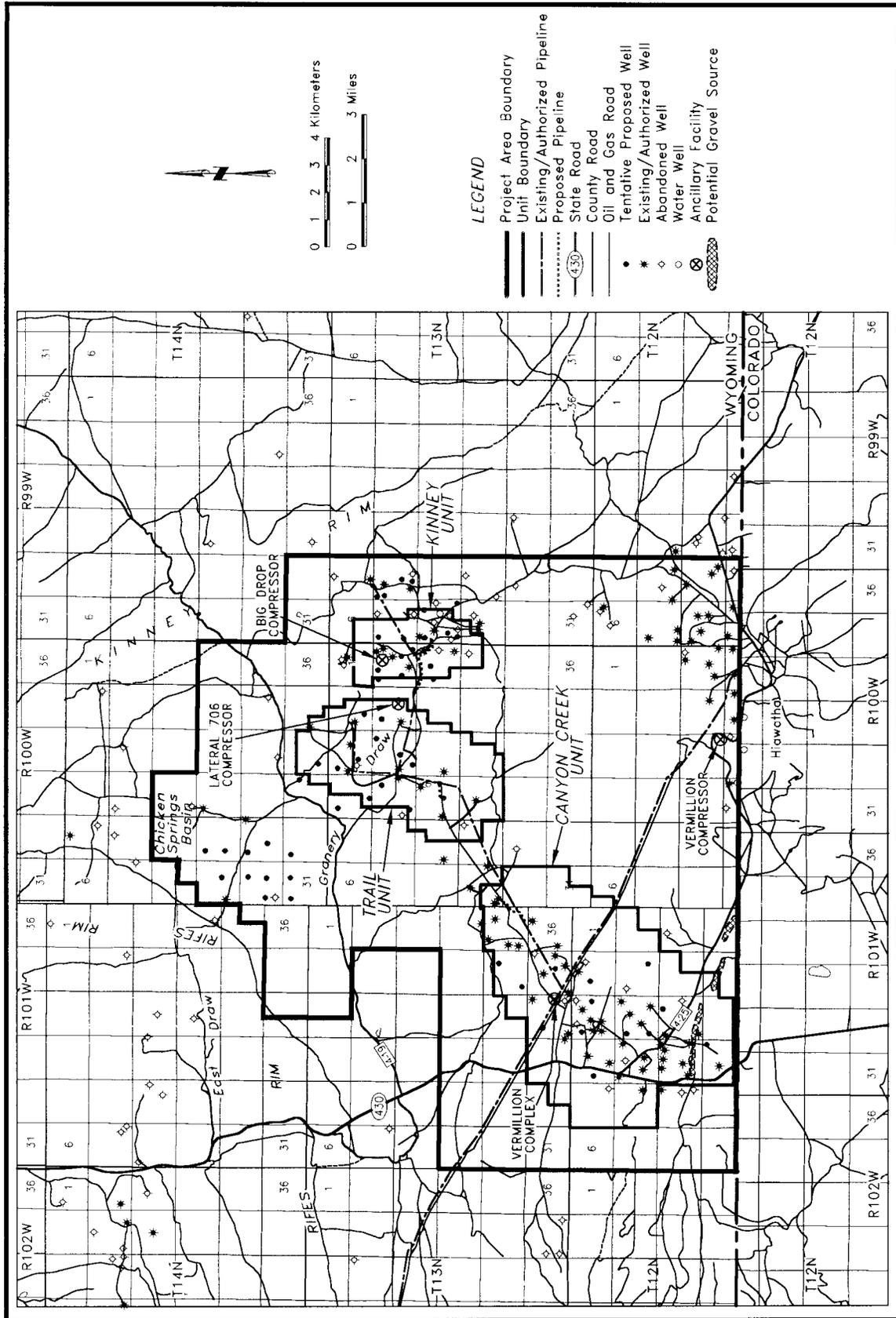
## Approved Project Components

This decision authorizes the initiation of permit approvals for the following project components on BLM-administered federal lands and/or minerals within the VBPA, subject to the requirements identified in Appendices B and C.

- 56 natural gas wells including three to eight exploration wells and 48 to 53 production wells at well densities not to exceed 16 locations per section (40-acre spacing) resulting in total surface disturbance of no more than 213 acres.
- Up to 28 mi of new access road rights-of-way (ROWs) resulting in a total surface disturbance of no more than 187 acres.
- Up to 28 mi of new gathering system pipeline ROWs, resulting in short-term surface disturbance of no more than a total of 85 acres outside of road ROWs.
- One or more gravel pits (approximately 20 acres).
- All necessary associated well-site equipment (well head, separator, dehydrator, production tanks, automation equipment, etc.) for the production of hydrocarbons.
- Additional compression may be allowed (the EA analyzed the potential for up to 200 tons of additional oxides of nitrogen [NO<sub>x</sub>] emissions). All air pollutant emissions from federally authorized development within the VBPA and southwest Wyoming will comply with all applicable local, state, and federal air quality laws, statutes, regulations, and implementation plans. The air quality analysis conducted for the Pinedale Anticline project updated the Pinedale, Kemmerer, and Rock Springs Resource Management Plans and the Southwest Wyoming air quality evaluation on a cumulative basis for the region.

Emissions from operation of the VBPA were based upon the analysis assumptions contained in the Jonah Field II (ISCST3), and the Continental Divide/Wamsutter II and Pinedale Anticline Air Quality Technical Reports (CALMET/CalPuff Dispersion Modeling). Also included by reference are Operator permit requirements for construction, modification, and operation of existing, new, and modified oil and gas production units under Wyoming Department of Environmental Quality (WDEQ)/Air Quality Division (AQD), *Oil and Gas Production Facilities, Chapter 6, Section 2, Permitting Guidance* (revised January 2000). If any activity and corresponding emission assumptions and/or impacts exceed those

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Map 2. Existing and Proposed Developments, Vermillion Basin Project Area, Sweetwater County, Wyoming, 2000.

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identified in the Pinedale Anticline environmental impact statement (EIS) cumulative air quality analysis, the BLM, in cooperation and consultation with WDEQ/AQD, and, as necessary, the Environmental Protection Agency (EPA) Region VIII, U.S. Forest Service, and other affected agencies, will undertake additional cumulative air quality environmental review as required by the Council on Environmental Quality regulations (40 *Code of Federal Regulations* (C.F.R.)1502.9(c)(1)(ii)).

Any additional proposed compression would be reviewed for Best Available Control Technology (BACT) and permitted by the WDEQ/AQD. Appropriate controls will be determined as part of the permitting process required by WDEQ/AQD. The BLM offers WDEQ the following measures for their consideration in permitting facilities having NO<sub>x</sub> emissions within the VBPA, but recognizes that implementing these measures are at WDEQ/AQD discretion and that some may be outside WDEQ regulatory authority.

Establish BACT at 0.7 grams/hour for large compressor engines.

Deny additional permits if NO<sub>x</sub> emissions exceed those analyzed in the cumulative air quality analysis for Southwest Wyoming until additional environmental review has been completed in accordance with the *National Environmental Policy Act* (NEPA).

Use other new technologies as they become available.

If development is proposed beyond that specified in this decision, or if new circumstances or new information relevant to environmental concerns and bearing on the Proposed Action or its impacts arise, additional environmental analyses will be required. Preconstruction design, construction, drilling, well completion and testing, production, and reclamation and abandonment activities will be conducted in accordance with Chapter 2 of the EA (Pages 18-43). Water for drilling operations will be obtained from existing, approved water wells. All produced natural gas will be moved out of the area via existing, approved natural gas transportation systems.

### **Finding of No Significant Impact**

Based upon the review of the EA, the BLM has determined that the Proposed Action with the implementation of the protective measures identified in Appendices B and C, herein, is in conformance with the Green River Resource Area (GRRRA) Resource Management Plan (RMP). Implementation of this decision will not have a significant impact on the human environment. Therefore, an EIS is not required.

### **Rationale for the Decision**

The decision to choose and approve the Proposed Action was based on the careful consideration of the following factors.

- The Proposed Action is in conformance and consistent with the GRRRA RMP which allows for the leasing, exploration, and development of energy resources in an environmentally responsible manner. State and local land use plans also provide for the responsible exploration and development of energy reserves.
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- The opportunity for public involvement was provided throughout the environmental analysis process. A scoping notice describing the Proposed Action was published December 10, 1999, to determine what issues and concerns were to be addressed during the environmental analysis process. The notice was sent to 195 individuals, agencies, and organizations including governmental offices, elected officials, public land users, private landowners, interest groups, and state news media. Twenty comment letters were received. A list of issues and concerns raised during the scoping process can be found on pages 8-11 in the EA.

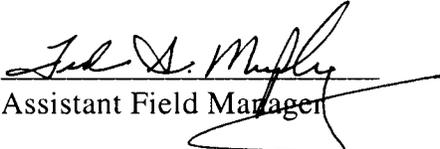
The EA was made available to the public starting August 9, 2000, and was mailed to 198 individuals, organizations, and appropriate federal, state, and local governmental entities. Nine comment letters were received; comments and BLM responses are summarized in Appendix A.

- BLM provided copies of the Biological Assessment (BA) to the U.S. Fish and Wildlife Service (USFWS) for review and comment via U.S. Mail on July 24 and October 3, 2000, and the USFWS response to the BA is included in Appendix A as Attachment 1.
- BLM's decision is consistent with all applicable federal, state, and county authorizing actions. All pertinent statutory requirements applicable to the Proposed Action were considered, including consultation with the USFWS regarding threatened or endangered species, and species proposed for listing, and coordination with appropriate governmental entities in the State of Wyoming and Sweetwater County.
- Adoption of the Proposed Action includes all practical means necessary to avoid or minimize adverse effects to the environment. In addition to standard operating procedures, this decision includes additional measures to further reduce adverse impacts to the environment (see Appendices B and C). No substantial issues are unresolved.

### Appeal

This decision may be appealed to the Interior Board of Land Appeals (IBLA), Office of the Secretary, in accordance with the regulations contained in 43 C.F.R. 3165.4(c). If an appeal is filed, the notice of appeal must be filed in this office (Bureau of Land Management, Rock Springs Field Office, 280 Highway 191 North, Rock Springs, Wyoming 82901) within 30 days of receipt of this decision (cover letter date plus 5 days mailing time). The appellant has the burden of showing the decision appealed from is in error.

If you wish to file a petition (pursuant to 43 C.F.R. 3165.4(c)) for a stay (suspension) of the effectiveness of this decision during the time that your appeal is being reviewed by the IBLA, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed in 43 C.F.R. 3165.4(c). Copies of the notice of appeal and petition for a stay must also be submitted to the IBLA and to the appropriate office of the Solicitor at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

  
Assistant Field Manager

10-30-2000  
Date

**APPENDIX A:**

CHANGES TO THE ENVIRONMENTAL ASSESSMENT,  
SUMMARY OF COMMENTS, AND BLM COMMENT RESPONSES,  
VERMILLION BASIN NATURAL GAS EXPLORATION  
AND DEVELOPMENT PROJECT

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**APPENDIX A:**

**CHANGES TO THE ENVIRONMENTAL ASSESSMENT,  
SUMMARY OF COMMENTS, AND BLM COMMENT RESPONSES,  
VERMILLION BASIN NATURAL GAS EXPLORATION  
AND DEVELOPMENT PROJECT**

**MODIFICATIONS/CORRECTIONS TO THE EA**

**2.1.10 Geophysical Activities**

Page 41, paragraph 2, line 1. At the start of the sentence beginning “Geophysical operations” insert “While no geophysical operations are currently proposed by the Operators for the VBPA,”.

**2.1.13 Applicant-Committed Practices**

Page 53, paragraph 1, line 2. At the end of the paragraph insert a new sentence that reads “Furthermore, the BLM would notify all Operators of their responsibilities to comply with federal and other applicable regulations, regardless of land or mineral ownership.

**2.1.13.8 Vegetation**

Page 63, item 1. Replace item 1 with the following:

- “1. As mutually agreed upon between Operators and the BLM, site-specific surveys for special status plant species (SSPS) would be conducted prior to any surface disturbance in areas determined by the BLM to contain potential habitat for such species (BLM Directive U.S. Department of the Interior [USDI]-BLM 6840). These surveys would be completed by a qualified botanist as authorized by the BLM, and may be financed by Operators, and the botanist would be subject to BLM’s SSPS survey policy requirements. If any SSPS or their habitats are found, BLM recommendations for avoidance would be implemented. Project facilities would be relocated to avoid SSPS, and their habitat would be avoided, where practical.”

**2.1.13.9 Wildlife and Fisheries**

Page 68, fourth bullet, third line. Delete the clause “(2,000 ft for bald eagles)”.

Pages 69 and 70, items 18 - 20. Replace items 18 - 20 with the following:

- “18. As mutually agreed upon between Operators and the BLM, site-specific surveys for threatened, endangered, proposed, and candidate (TEP&C) and other BLM special status animal species (SSAS) would be conducted prior to surface disturbance in areas determined by the BLM to contain habitat for such species. These surveys would be completed by a qualified biologist as authorized by the BLM and may be financed by Operators. Surveys would focus on species known to occur on the VBPA, as well as
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those potentially occurring in the area. If any TEP&C or SSAS are found on the area, BLM recommendations for avoidance would be implemented. Habitats where candidate or other sensitive animal species are likely or are known to occur would be avoided, where practical, through minor relocation of project facilities, unless otherwise specifically addressed in this document.

19. Mountain plover surveys would not be necessary for construction activities planned for the period of July 11 through April 9 (personal communication, March 17, 2000, with Pat Deibert, USFWS). However, in the event the bird is listed under the *Endangered Species Act* (ESA), surveys would be implemented prior to disturbance regardless of when disturbance actions would occur, and informal consultation with the USFWS would be initiated.
20. Disturbance in mountain plover habitats (i.e., active prairie dog towns and areas with vegetation less than 4 inches in height [cushion plant and Gardner's saltbush communities]) would be avoided where practical, and where these habitats would be disturbed, reclamation would utilize procedures designed to re-establish suitable mountain plover habitat as directed by the BLM. Furthermore, mountain plover surveys would be conducted prior to disturbance within identified plover habitat on or within 200 m (656 ft) of areas proposed for development during the forthcoming year by a qualified biologist in accordance with USFWS guidelines (USFWS 1999b) as follows:
  - surveys would be conducted during early courtship and territory establishment;
  - surveys would be conducted from sunrise to 10:00 a.m. and/or from 5:30 p.m. to sunset;
  - surveys would be conducted from four-wheel drive vehicles or, where access is a problem and/or no visual observations are made from vehicles, all-terrain vehicles (ATVs) would be used;
  - surveyors would remain in or close to vehicles when scanning with binoculars and/or spotting scopes;
  - sites would be surveyed three times during the survey window (May 1-June 15), with each survey separated by at least 14 days;
  - surveys would not be conducted in inclement weather (e.g., poor visibility);
  - surveys would focus on locating displaying or calling males;
  - if breeding birds are observed, additional surveys would be implemented immediately prior to construction to search for active nest sites;
  - if an active nest is located, a 200-m (656-ft) buffer zone would be established around the nest to prevent direct and indirect nest disturbance; and
  - surface-disturbing activities would occur as near to completion of surveys as possible.”

Page 71, item 24, line 5. Change the word “informal” to “formal”.

Page 71, item 29. After item 29, insert the following additional items:

- “30. Operators would provide to field personnel USFWS educational materials illustrating and describing the mountain plover, its habitat needs, life history, threats, and gas development activities that may lead to incidental take of eggs, chicks, or adults.
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31. All suspected observations of mountain plover adults, eggs, chicks, or carcasses on the VBPA, however obtained, would be promptly reported to:
- Wildlife Biologist, BLM,  
Jim Dunder, (307) 352-0315  
Vicki Herren, (307) 352-0236  
Rock Springs Field Office  
280 Highway 191  
Rock Springs, WY 82901
  - Field Supervisor or Designee, USFWS  
(307) 772-2374  
Wyoming Field Office  
4000 Airport Parkway  
Cheyenne, WY 82001

Observations would include a description including what was seen, time, date, exact location, and observer's name, address, and telephone number. Carcasses or other suspected mountain plover remains would be collected by BLM or USFWS employees and deposited with the USFWS's Wyoming Field Office.

32. Between April 10 and July 10, vehicle travel (excluding vehicles necessary for facility site location surveys) would be restricted to existing roads, trails, and well pads, unless first cleared by surveys consistent with the Plover Guidelines. Results of all plover surveys would be reported to the USFWS's Wyoming Field Office.”

#### 2.1.13.10 Cultural and Historic Resources

Pages 71 -73, items 1 - 7. Replace items 1 - 7 with the following:

- “1. Operators would inform their employees and contractors about the relevant federal regulations protecting cultural resources. If any cultural resources subject to the *National Historic Preservation Act of 1966* (as amended) (NHPA) or the *Archaeological Resource Protection Act of 1979* (ARPA) are discovered during exploration and/or construction within the VBPA, activities shall immediately cease and the BLM would be notified.
  2. Operators would adhere to National Cultural Programmatic Agreement (NCPA) and Wyoming State Protocol (WSP) prior to any surface-disturbing activity.
  3. Operators would halt construction activities in potentially affected areas if previously undetected cultural resources are discovered during construction. The BLM would be notified immediately and BLM would initiate consultation with the Wyoming State Historic Preservation Office (SHPO) concerning proper evaluation and stabilization measures pursuant to the WSP under the NCPA. Construction would not resume until a Notice to Proceed is issued by the BLM.
  4. If areas of traditional cultural properties, or other sensitive Native American areas are identified in affected areas, BLM and affected tribes would identify potential impacts. BLM
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would determine appropriate management on a case-by-case basis. Operators may participate in the consultation process; however, responsibilities rest with BLM and tribes to consult on a government-to-government basis.

5. Provisions similar to those of the *Oregon/Mormon Pioneer National Historic Trails Management Plan* (BLM 1986a) and updated *Management Plan and Use Plan Update/Final Environmental Impact Statement: Oregon/Mormon National Historic Trails* (National Park Service [NPS] 1999) would be followed for any actions potentially affecting the Cherokee Trail or contributing portions of the Rock Springs to Browns Park Road and Rock Springs to Hiawatha Road.
6. Operators would pay the costs of BLM-required mitigation for cultural resources caused by Operators during project construction.

### **3.2.4 Threatened, Endangered, Proposed, and Candidate Species (TEP&C)**

#### Colorado River Endangered Fish Species

Page 123, paragraph 2, lines 7 and 8. On line 7, before the word “and” insert “, introductions of non-native fish species,” and on line 8, after the acronym “VBPA” insert “; however, water from the Upper Green River Basin affects the downstream habitat of these fish”.

#### 4.2.4.1 The Proposed Action

##### TEP&C Animal Species

Page 183, paragraph 1, lines 2 and 4. On line 2 after the word “to” insert “the endangered” and on line 4 after the word “population” insert “; however, adverse impacts to the nonessential population may occur”.

Page 184, second paragraph, lines 21 - 26 and 185, first paragraph, lines 1-4. Replace all materials in the paragraph starting with the sentence “No withdrawal...” with “No withdrawal of surface water is proposed. The Proposed Action would require approximately 189.9 acre-ft of groundwater over the 10- to 20-year project development period or from 9.5 to 19.0 acre-ft per year (i.e., less than the 100 acre-ft/year limit). The Proposed Action would utilize existing water wells that currently tap water from depths of 690 to 2,540 ft. Due to the depths of groundwater withdrawal, the maximum annual groundwater withdrawal rate of 19.0 acre-ft per year (potentially in connection with surface water), and the application of standard wetland, erosion, sedimentation, and aquatic habitat protection measures, it is highly unlikely that the proposed project would affect the flow characteristics of surface water resources within and in the vicinity of the VBPA. Therefore, impacts to the Green River/Colorado River surface water system would be minimized.

#### 4.2.4.3 Mitigation

Page 186, first paragraph, line 2. Add a new sentence that reads “If Ute ladies’-tresses are found in the VBPA individuals would be avoided.”

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#### 4.2.4.3 Cumulative Impacts

Page 186, second paragraph, lines 2 and 3. On line 2, after the word “on” insert “endangered” and on line 3 after the word “from” insert “non-BLM”.

### **SUMMARY OF EA COMMENTS AND BLM RESPONSES**

Nine comment letters were received on the EA. The comments are summarized below (in italics) with BLM responses to each immediately following the comment. The BLM would like to thank all commentors for taking the time to review the EA and for providing comment.

#### **Questar Market Resources Group/Wexpro Company**

*The BLM should not require any additional mitigation measures beyond those included as applicant-committed measures.*

The BLM believes that with the inclusion of applicant-committed measures all project impacts will occur at less than significant levels; however, in some instances additional mitigation measures have been deemed appropriate to address public and/or other agency concerns for specific resource protection. In most cases, these additional mitigation measures would be included only on a site-specific basis as identified during APD and ROW application reviews.

*Management objectives identifying resource enhancement or improvement may not be feasible as a component of the proposed project.*

Management objectives may not in all cases be specific to a proposed project. Objectives calling for resource enhancement or improvement are included in the EA analyses only to ensure that the proposed project would not interfere with BLM’s capacity to attain the objective. The BLM has determined that the proposed project would not significantly interfere with the attainment of these management objectives.

*The EA provides that general visual intrusion and surface disturbance would be restricted or prohibited within 1.0 mi of the general Cherokee Trail corridor, but also indicates that the BLM may require a 2.0-mi wide protective corridor along the general Cherokee Trail route until the exact route is identified. Wexpro assumes these provisions set forth basically the same protection measure.*

Your assumption is correct. The BLM may require that a 2.0-mi wide protective management corridor be established along the general route of the Cherokee Trail (1.0 mi on either side) until the exact trail route is identified in a single comprehensive study (see Appendix C, Item 35).

#### **U.S. Fish and Wildlife Service**

*Impacts to wildlife may not be accurately portrayed since the number of wells identified may not allow for dry holes.*

The total number of wells proposed for development is 56, regardless of well success. The BLM believes that impacts to wildlife are accurately identified in the EA.

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*Since BLM recommendations for project-related impact minimization (avoidance or mitigation) are not identified in the EA, it is not possible to determine actual impacts to wildlife and other resources.*

All TEP&C species potentially encountered on the VBPA would be avoided such that no adverse effects are anticipated, and potential habitats for TEP&C species and other BLM-identified species of concern would be surveyed as appropriate. In the event avoidance of TEP&C habitats and species of concern and their habitats is not possible, additional protection/mitigation measures would be applied on a case by case basis in consultation with all appropriate entities to ensure impacts occur at less than significant levels. All protection/mitigation measures for all TEP&C species and their habitats in the VBPA are identified in the BA and the EA has been modified herein to reflect these changes. Additional protection/mitigation measures, if necessary, would be specified in Conditions of Approval for each APD and as stipulations for each ROW authorization.

*The BLM is responsible for evaluating all potential impacts to listed species, including those occurring on private and state lands; should develop measures to avoid or minimize impacts to listed species on non-federal lands; and should notify Operators of their responsibilities to comply with federal and other applicable regulations regardless of land or mineral ownership.*

All impacts and mitigation measures identified for TEP&C species in the EA and BA for this project are applicable for all lands, regardless of surface or mineral ownership. Please note that only one proposed well location occurs on non-federal surface or mineral estate (see Map 2). The BLM will notify all Operators of their responsibilities to comply with the ESA and other federal regulations regardless of land or mineral ownership.

*The EA does not provide sufficient information to determine whether depletions to the Colorado River system would occur as a result of this project, and if depletions are identified formal section 7 consultation will be necessary.*

While no depletions are anticipated, formal consultation has been initiated, and the response to this consultation is provided as Attachment 1 to this appendix.

*If additional water developments for wildlife are proposed and these actions could result in a depletion to the Colorado River system, formal Section 7 consultation will be necessary.*

No additional water developments are currently proposed; however, if they are proposed in the future, further consultation with the USFWS will be initiated.

*If the mountain plover becomes listed prior to project completion, surveys for plover will be necessary prior to construction regardless of the time of construction.*

The BLM and Operators recognize this requirement, and the EA has been modified to reflect this determination (see Section 2.1.13.9, item 18, above).

*While there are no ESA restrictions for black-footed ferret due to the non-essential experimental designation given ferrets in the project area, there still could be impacts to the black-footed ferret.*

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The BLM recognizes your comment, and the EA has been modified (see Section 4.2.4.1, above).

*If suitable habitat for Ute ladies'-tresses is impacted, surveys should be conducted and enforceable measures applied to minimize impacts if the plant is found.*

Surveys for Ute ladies'-tresses will be conducted in suitable habitat prior to disturbance, and if found, individuals will be avoided to ensure no adverse effects. See Section 2.1.13.8, above.

*We strongly encourage BLM to find measures to avoid project-related impacts to sage grouse.*

The BLM continues working on development of new/more effective measures for sage grouse protection through revisions to existing mitigation and management protocol. Interim management guidelines are currently being developed by BLM.

*Operators should be made aware of the problem of bird mortality in reserve pits and potential violations of the Migratory Bird Treaty Act.*

All pits potentially hazardous to wildlife will be netted as necessary to avoid impacts to migratory birds and other species. Operators will be informed of their responsibilities to comply with the *Migratory Bird Treaty Act* during the APD process.

*All hydrogen sulfide flare stacks should be equipped with anti-perching devices.*

No hydrogen sulfide is known from the area, and no flare stacks are proposed.

*The BLM should require that all oil field actions resulting in injured or dead wildlife be reported to the nearest USFWS law enforcement office.*

If any project action results in injury or death to wildlife, the BLM will notify the USFWS and Wyoming Game and Fish Department (WGFD) as appropriate.

*We believe a larger cumulative impact analysis area for raptors (greater than the VBPA and a 1.0-mi buffer) may result in a more realistic assessment of cumulative impacts.*

The BLM believes that since adequate raptor protection measures will be employed during project development, no far-field/cumulative effects to raptors are likely to occur. Use of a 1.0-mi area outside of a specific project area for raptor impact analysis is a common practice.

*All BLM recommendations to minimize impacts have not been disclosed and additional concerns regarding impacts to Colorado River fish have been identified.*

All mitigations are presented in this Decision Record, and issues regarding potential adverse effects to Colorado River fish have been resolved. See Section 4.2.4.1, above.

### **State of Wyoming Office of Federal Land Policy**

*The State of Wyoming and its agencies have no objection to the proposed action provided WGFD concerns are given consideration.*

WGFD concerns are addressed in the next section.

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## Wyoming Game and Fish Department

*The amount of cumulative impact disturbance is probably an underestimate of impacts to the Bitter Creek pronghorn antelope herd, since it does not include impacts from the South Baggs project.*

While the data used to quantify cumulative disturbance to the Bitter Creek herd were obtained from the Continental Divide/Wamsutter II EIS, the data used included disturbance estimates associated with the South Baggs Project; therefore, the BLM believes cumulative disturbance is not underestimated.

*The percentage of impacted habitat is probably larger due to fragmentation of big game security habitat.*

The BLM concurs (see EA page 173).

*It is important for the BLM to set and maintain a maximum road density.*

The BLM makes every effort to limit the number and miles of roads constructed for natural gas development, and will not authorize unnecessary or redundant roads. In addition, the BLM requires that all newly constructed roads unnecessary for the proposed project be adequately reclaimed.

*Reclaimed areas in crucial winter range will be lost until shrubs are regenerated to predisturbance conditions.*

The BLM concurs (see EA page 171).

*We are interested in water projects for wildlife and want to work cooperatively with BLM and Operators in the placement and design of these features.*

The BLM will work with the WGFD, Operators, and other relevant parties in the event wildlife water projects are proposed.

*Sage grouse in the VBPA are in upland bird management area 6, not area 10.*

The BLM is aware that the affected upland game bird management area is area 6 (see EA page 113).

*We have concerns about the cumulative impacts to wildlife populations from wide-ranging gas development and the BLM and Operators should commit to mitigation and monitoring that includes statistically sound sampling methodology.*

The BLM believes that cumulative impacts to wildlife are adequately addressed in the EA, and that appropriate mitigation and monitoring actions are identified to hold impacts to less than significant levels. The BLM will consult with WGFD personnel, as appropriate.

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*We believe buffer zones along stream and riparian corridors should always be required to protect aquatic and riparian systems.*

Linear features (roads, pipelines) must in some cases cross drainages. In no event would well locations or other non-linear features be located within 500 ft of perennial drainages or open water habitats, or within 100 ft of intermittent and large ephemeral drainages. In most cases, crossings would be perpendicular to channels..

*The WGFDF Trout Stream Classification system is used to classify the overall quality of cold-water stream systems; however, low system ratings do not mean that there are no fish present. Streams with low system ratings may contain warm-water fish species (e.g., mountain suckers are known to exist in areas of the Vermillion Basin).*

Thank you for your clarification.

### **Wyoming State Geological Survey**

*We do not see any problems or unaddressed issues related to the Proposed Action. This is in an area of known gas resources and prior gas development, and the proposed project will likely contribute to the State's economy and produce gas and hydrocarbon resources that our nation is in need of.*

Thank you for taking the time to review the EA and for providing your comments.

### **Lance & Jill Morrow**

*We would like to have BLM abandon the proposal for the 200% increase in acreage to be developed. The proposed project will have significant adverse impacts on roadless areas, soils, native vegetation, riparian areas, and sensitive wildlife (specifically pygmy rabbit, Wyoming pocket gopher, flannelmouth sucker, midget faded rattlesnake, loggerhead shrike, and rough-legged and ferruginous hawks).*

Total new project surface disturbance would be approximately 505 acres (i.e., an increase of less than 50% above existing disturbance levels [1,105 acres])(see EA Table 2.1). The BLM has determined that the project would not have any significant adverse effects and the Proposed Action, with the mitigation identified in Appendices B and C to reduce potential impacts, is now authorized pursuant to this Decision Record. No existing or proposed roadless areas occur in the VBPA, nor is it likely that any will be proposed (see Map 2). Impacts to the species listed are appropriately identified in the EA (specifically for Wyoming pocket gopher, loggerhead shrike, and rough-legged and ferruginous hawks, and in combination with other mammals, amphibians and reptiles, or fish for pygmy rabbit, midget faded rattlesnake, and flannelmouth sucker, respectively).

*There is the potential of the introduction of invasive exotic vegetation (e.g., cheatgrass), and the BLM should be aware that this weed has invaded and destroyed millions of acres of public lands and should consider this fact when permitting activities. The soils in the area are also susceptible to rutting and erosion, and increased traffic would degrade water and soil quality.*

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Invasive species and soil erosion are addressed in the EA, and while cheatgrass is not specifically identified, impacts are anticipated to be less than significant due to prompt reclamation and the application of appropriate weed control and soil stabilization techniques in the event they are necessary. The BLM does consider impacts from weed infestation and soil erosion during activity permitting.

*We would suggest the BLM begin inventories of several roadless areas in the VBPA that have not been surveyed.*

No existing or proposed roadless areas are present in the VBPA. Roadless area inventories are beyond the scope of this proposed project.

*Current BLM reclamation standards are not adequate to restore areas to pre-exploitation appearance or vegetation and wildlife status.*

The BLM believes that current reclamation standards are adequate for post-project visual resource, vegetation, and wildlife habitat reclamation.

### **Nancy Debevoise**

See also Lance & Jill Morrow, above.

*Field surveys to identify the numbers and distributions of all special status species must be conducted, and the BLM must establish specific habitat and population management and conservation objectives as outlined in BLM Manual 6840. BLM must also defer any decision until they issue a list of Special Status Species for Wyoming and comply with the assessment and conservation requirements for species.*

Field investigations for sensitive species/sensitive species habitats are conducted prior to disturbance during APD and ROW application reviews in compliance with BLM Manual 6840. While all potential sensitive species occurring in the VBPA or in the state have not been specifically identified (species are regularly added to and removed from lists based on new information) the aforementioned field investigations and the associated avoidance and/or mitigation measures that may be applied in the event a species is found are sufficient to comply with 6840 and hold potential impacts to these species to less than significant levels. Where species are not specifically identified in the EA, they are either unlikely to be present in the VBPA, or impacts would be as identified for the biological group in which they occur (e.g., raptors, mammals, vegetation).

*Because only 3% of the VBPA contains riparian habitat any development in or near this habitat could stress and displace resident wildlife.*

The BLM concurs, and these areas would be avoided, where practical. Only linear feature crossings of these important habitats could occur during project development.

*I urge you to complete an EIS to properly assess and disclose project threats to roadless and riparian areas.*

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The BLM believes that impacts are adequately addressed in the EA and no significant impacts are anticipated; therefore an EIS is unnecessary. The mitigation measures identified in Appendix C provide additional opportunity to further reduce potential impacts and would be applied as necessary during activity permitting processes.

**Page McNeill**

See also Lance & Jill Morrow and Nancy Debevoise, above.

*Undeveloped desert wildlands should be protected from rampant un-monitored and unmanaged off-road vehicle (ORV) use.*

No ORV use of the area is proposed, and the BLM believes ORV use of the area would not be significantly increased as a result of the proposed project.

*Soils in the VBPA are too sensitive for development activities.*

The BLM believes that with prompt reclamation of areas unnecessary for development coupled with the application of appropriate soil stabilization and erosion control methods identified in the EA, no significant adverse effects to soils would occur.

**Biodiversity Associates/Wyoming Outdoor Council**

See also Lance & Jill Morrow, Nancy Debevoise, and Page McNeill, above.

*We oppose the proposed project and request an EIS be prepared to address the significant impacts this project would have on the environment.*

The BLM believes no significant impacts to any resource would occur as a result of the proposed project directly, indirectly, and/or cumulatively; therefore, preparation of an EIS is unnecessary.

*Previously undeveloped and roadless areas and potential areas of critical environmental concern (ACECs) are threatened by this project, and the impacts upon these areas are not addressed in the EA.*

No existing or proposed roadless areas or ACECs occur within the VBPA nor would any be affected by the proposed project. ACEC and roadless area designations are beyond the scope of this project, and it is unlikely that any such designations would be identified in the future for the VBPA (see Map 2). The BLM believes impacts and appropriate mitigation are adequately identified in the EA.

*An accurate list of potentially affected Special Status Species is not included in the EA, and the assessment of potential impacts to Special Status Species and endangered and threatened species is not adequate to justify assertions presented in the EA.*

The BLM believes that impacts and mitigations for special status species are appropriately addressed in the EA (see also Lance & Jill Morrow and Nancy Debevoise, above). With regard to the black-footed ferret, the BLM believes and the USFWS concurs that the proposed project

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is unlikely to adversely affect the endangered black-footed ferret (see Attachment 1). Impacts to and mitigations for raptors are also adequately assessed in the EA, and further on-site investigations conducted as components of APD and ROW application reviews may lead to the implementation of additional site-specific protection measures for these and other sensitive species. No impacts are anticipated to whooping crane, and the BLM believes and USFWS concurs that impacts to mountain plover/mountain plover habitat are adequately identified and appropriate mitigations are proposed to avoid jeopardy to the species (see Attachment 1). In the event mountain plover become federally listed, additional protection measures including further consultation with the USFWS would be initiated.

*The EA leaves out many potentially significant direct, indirect, and cumulative environmental impacts (reasonably foreseeable development, ORV use on other resource values) and fails to evaluate the effectiveness of proposed mitigation measures to minimize potential impacts.*

The BLM believes that all direct, indirect, and cumulative impacts and associated mitigations for all potentially affected resources are adequately addressed in the EA. Required mitigations are presented in this decision document, no additional mitigation measures are currently proposed, and all mitigation measures would be monitored by the BLM and corrected where inadequate or proven ineffective. No permanent developments are proposed. The EA considers all other known developments potentially affecting wildlife and other relevant resources and, where data was available, considered these cumulative effects for periods longer than the 5 years suggested in your letter. The BLM does not anticipate ORV use in the VBPA to increase as a result of the proposed project, and believes the proposed project would not significantly augment ORV use. It is possible that the project may result in decreased ORV use in the area due to the increased presence of natural gas development operations (see EA Section 4.5.1). Stream channels in the VBPA are prone to flooding in response to precipitation and runoff events; however, impacts to and from flooding are anticipated to be less than significant since these areas would be avoided by all project features except linear disturbances necessary for channel crossings. Impacts to vegetation and riparian areas are addressed, including the potential for the spread of weedy species (see EA Section 4.2.1.1). Impacts to wildlife and fisheries including herptiles and downstream fish species are discussed and no significant impacts to the biodiversity and ecology of the area are anticipated. The potential for catastrophe remains unchanged from that of the No Action, since all existing and proposed project operations would be conducted pursuant to all relevant health, environmental, safety, and transportation rules and regulations. The BLM believes socioeconomic, land use, and recreation impacts are appropriately addressed in the EA, including impacts associated with increased access. Please note on Map 2 that no new well locations are currently proposed for a distance of greater than 2.0 mi from an existing producing well, thereby leaving much of the VBPA unchanged from its present state, including specific area visual characteristics.

*The impacts posed by expanding 2,436 acres over thousands of acres and into undeveloped areas are significant.*

The proposed project would require an estimated maximum of 505 new acres of disturbance (163 acres of life-of-project [LOP] disturbance) and would primarily be located within existing areas of oil and gas development (see Map 2). No significant impacts are anticipated.

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*The EA claims the No Action Alternative impacts on mineral extraction would violate contractual agreement between the U.S. and the lessees and would be outside of the jurisdiction of the BLM to implement the alternative without congressional approval.*

The BLM did not mean to suggest that the No Action Alternative could not be selected (see EA Section 2.2), only that denial of all activity on a leasehold would constitute a breach of contract of an Operator's rights. The BLM could have selected the No Action Alternative; however, under this alternative individual proposals for natural gas development would still be considered. No Surface Occupancy (NSO) restrictions are designated on leases, and all federal lands in the VBPA have been leased without NSOs.

*The EA fails to consider all reasonable alternatives including stronger mitigation measures, (e.g., directional drilling) and alternatives not within the jurisdiction of the BLM.*

The BLM believes all reasonable alternatives and mitigation measures are adequately addressed in the EA as are potential alternative rejection determinations. Directional drilling may be used if economically viable; however, the BLM does not believe it is necessary or appropriate to mandate the use of this procedure for this project.

*The EA claims there are environmental impacts associated with the No Action Alternative.*

Existing land uses on the VBPA would continue under the No Action Alternative, and these land uses have impacts upon area resources. The BLM believes it is important to consider these impacts as a component of the No Action Alternative as well as for cumulative impact analyses.

*The BLM is proposing to allow exploratory wells which may have significant impacts and prejudice the choice of alternatives before the NEPA process is complete.*

Exploratory well development was permitted under the authority of existing leases only where it was found during site-specific NEPA analyses that: no significant environmental impacts would occur; there would be no irreversible or irretrievable resource commitments; and the ability to select an alternative action in the EA was not precluded. No exploratory wells were drilled during the analysis process.

*The EA does not present thorough and accurate scientific data and does not meet BLM's obligation of scientific integrity.*

The BLM believes the information presented in the EA is accurate. If you are aware of specific scientific information relevant to this environmental analysis, the BLM invites you to submit the data for our review.

*The proposed project is in direct conflict with the management goals and actions of the GRRR RMP ROD and EIS and the Federal Land Policy and Management Act (FLPMA).*

The proposed project is in conformance and is consistent with the GRRR RMP/EIS and FLPMA. The proposed project would not interfere with BLM's abilities to attain the objectives and goals of the RMP/EIS and FLPMA, including those associated with air quality, opportunities for science and education, cultural and paleontological resource conservation, recreation, and vegetation and wildlife, including special status species and their habitats and diversity.

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**ATTACHMENT 1:**  
U.S. FISH AND WILDLIFE SERVICE RESPONSE TO  
THE VERMILLION BASIN BIOLOGICAL ASSESSMENT

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**APPENDIX B:**  
OPERATOR-COMMITTED MEASURES

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**APPENDIX B:**  
**OPERATOR-COMMITTED MEASURES**

The following Operator-committed measures will be implemented by Operators to minimize impacts to the environment. Mitigation measures may be waived when deemed inappropriate by the BLM if a thorough analysis determines that the resource(s) for which the measure was developed would not be impacted. Further site-specific mitigation measures may be identified during APD and ROW application review processes. To assure compliance with the applicant-committed mitigation measures identified in the EA and in APDs and ROW applications, Operators will provide an individual to be available during construction operations who will consult with the BLM on a case-by-case basis as necessary during field development.

Implementation of these measures on state and private lands would be subject to state or landowner preferences and agreements with individual Operators. Existing lease stipulations will be applied. Development activities on all lands will be conducted in accordance with all appropriate federal, state, and county laws, rules, and regulations.

The language describing committed measures under Cultural and Historic Resources has been modified herein to reflect the latest policy and procedures for compliance with the National Historic Preservation Act.

**Preconstruction Planning and Design Measures**

1. Operators and the BLM will conduct on-site interdisciplinary team (IDT) inspections and/or environmental reviews of each proposed area of disturbance (e.g., well sites, roads, pipelines) to develop site-specific recommendations and mitigation measures.
  2. Operators will adhere to the specifications, guidelines, and development protocol identified for this project. Roads on federal lands required for the proposed project will be in accordance with BLM Manual 9113 guidelines (BLM 1985, 1991a) (references are provided in the EA).
  3. Operators will prepare and submit individual drill site design plans to the BLM for approval prior to initiation of construction. These plans will show the layout of the well location over the existing topography, dimensions of the pad, volumes and cross sections of cut-and-fill, location and dimensions of reserve and flare pits, and access road design. Approval of individual project components (i.e., wells, roads, pipelines, and ancillary facilities) will be contingent on completion and acceptance of a site-specific cultural resource literature search; Class III inventory report; paleontological inventory (as necessary); threatened, endangered, proposed, candidate, and sensitive species surveys; sage grouse lek clearance; raptor nest clearance; and any other clearance specified by the BLM.
  4. Prior to construction, Operators will submit a Surface Use Plan or a Plan of Development for each well site, pipeline segment, and access road project. The plan will detail the measures and techniques to be used for erosion control, revegetation, and restoration and will adhere to reclamation guidelines present in the GRRA RMP. The plan will provide
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specific detail on project administration, time frames, responsible parties, objectives, characteristics of site predisturbance conditions, topsoil removal, storage and handling, runoff and erosion control, seed bed preparation, seed mixes, seed application, fertilization, mulching, site protection, weed and livestock or other herbivore control, monitoring and maintenance procedures, and other site-specific mitigation and environmental protection measures. Final site locations will be confirmed by the BLM and Operators following on-site inspections.

5. Detailed engineering will be conducted for construction activities on steep and/or unstable slopes when required by the BLM, and will be approved by the BLM prior to initiating construction.
6. Operators in conjunction with the BLM will identify aggregate and other surfacing material sources for use in drill site and road construction. The appropriate surface management agency will approve these sources, including timing for extraction, prior to use.
7. Operators will obtain all necessary federal, state, and county permits, including necessary Storm Water Pollution Prevention Plans (SWPPPs).

### **Air Quality**

1. Operators will adhere to all applicable Wyoming Ambient Air Quality Standards (WAAQS), National Ambient Air Quality Standards (NAAQS), and permit requirements (including preconstruction, testing, and operating permits), as well as all other regulations, including those related to motorized equipment, as required by the WDEQ/AQD. Necessary air quality permits to construct, test, and operate facilities will be obtained from the WDEQ/AQD.
  2. All internal combustion engines will be kept in good working order by implementing regular equipment maintenance.
  3. Operators will advise personnel of appropriate speed limits as directed by the BLM to reduce fugitive dust concerns, as well as for human health and safety reasons.
  4. Operators will limit NO<sub>x</sub> emissions from potential new compression in the VBPA to less than 200 tpy.
  5. Operators will not allow open burning of garbage or refuse at well locations or other facilities in the VBPA. Any other open burning will be conducted under the permitting provisions of the *Wyoming Air Quality Standards and Regulations* (WDEQ/AQD 1989).
  6. Operators will initiate immediate abatement of fugitive dust by application of water or other methods when air quality, soil loss, or safety concerns are identified by the BLM or the WDEQ/AQD. The BLM will approve control measures, locations, and application rates. If watering is the approved control measure, Operators will obtain the water from existing water wells.
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**Topography and Physiography**

1. Operators will incorporate in their Surface Use Plans and Plans of Development the reclamation procedures and specifications contained in *Standard Practices Applied to Surface-Disturbing Activities* (BLM 1992:Appendix 7-2) and guidelines for road construction contained in BLM Manual, Section 9113 (BLM 1985, 1991a).
2. Areas with high erosion potential and/or rugged topography (steep slopes, stabilized sand dunes, drainages, floodplains, erosive and sandy soils) will be avoided where practical. When avoidance is not practical, disturbed area sizes will be minimized and specialized erosion control measures will be applied.
3. Upon completion of construction and/or production activities, Operators will restore the topography to near pre-existing contours.

**Geological/Paleontological Resources**

1. Geologic risks will be minimized by implementing site-specific alignments for roads, pipelines, and drill pads to avoid and/or minimize disturbances to unstable areas.
  2. BLM/Wyoming Oil and Gas Conservation Commission (WOGCC) casing and cementing criteria will be followed to protect all subsurface mineral-bearing and useable water-bearing zones.
  3. In areas of paleontological sensitivity, a determination will be made by the BLM as to whether a survey by a qualified paleontologist is necessary prior to the disturbance. In some cases, construction monitoring, project relocation, data recovery, or other mitigation will be required to ensure that significant paleontological resources are avoided or recovered during construction.
  4. A literature search and paleontologic resource database evaluation (nonfield) has been prepared for this project (Eratthem-Vanir Geological Consultants [EVG] and TRC Mariah Associates Inc. 2000), and all recommendations presented in the final report that are adopted by the BLM will be adhered to.
  5. If paleontological resources are uncovered during surface-disturbing activities, Operators will suspend all operations that will further disturb such materials and immediately contact the BLM, who will arrange for a determination of significance and, if necessary, recommend a recovery or avoidance plan. Mitigation of impacts to paleontological resources will be on a case-by-case basis, and Operators will either avoid or protect paleontological resources.
  6. Contractors and their workers will be instructed about the potential of encountering fossils and the steps to take if fossils are discovered during project-related activities. The illegality of removing vertebrate fossil materials from federal lands without an appropriate permit will be explained.
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**Soils**

1. Adverse impacts to soils will be mitigated by minimizing disturbance; avoiding construction with frozen soil materials; avoiding areas with high erosion potential (e.g., unstable soil, dunal areas, steep slopes, drainages, floodplains), where practical; salvaging and selectively handling topsoil from disturbed areas; adequately protecting stockpiled topsoil and replacing it on the surface during reclamation; leaving the soil intact (scalping only) during pipeline construction, where possible; using appropriate erosion and sedimentation control techniques including, but not limited to, diversion terraces, riprap, and matting; and promptly revegetating disturbed areas using native species. Temporary erosion control measures such as temporary vegetation cover; application of mulch, netting, or soil stabilizers; and/or construction of barriers may be used in some areas to minimize wind and water erosion and sedimentation prior to vegetation establishment. Specific measures and locations will be specified in Surface Use Plans or Plans of Development prepared during the APD and/or ROW application processes.
  2. Prior to commencement of construction, sufficient topsoil or other suitable material (up to 12 inches) will be stripped from proposed disturbance areas, including cut, fill, stockpile, and pit areas, and salvaged topsoil will be stockpiled for future reclamation operations.
  3. Operators will keep the area of disturbance to the minimum necessary for any given activity while providing for safety.
  4. Operators will minimize project-related travel during periods when soils are saturated and excessive rutting (>4 inches) could occur, and Operators will restrict off-road vehicle travel by employees and contract workers.
  5. Where practical, Operators will locate pipelines immediately adjacent to roads or other pipelines to avoid creating separate areas of disturbance.
  6. Operators will minimize construction activities in areas of steep slopes and sand dunes and will apply special slope-stabilizing practices and techniques (e.g., mulch, revegetation) in accordance with applicable geotechnical data if construction cannot be avoided in these areas.
  7. Operators will not conduct construction activities on frozen or saturated soils unless an adequate plan is submitted and approved by the BLM that demonstrates that adverse impacts will be mitigated.
  8. Operators will minimize disturbance to vegetated cuts and fills on new and existing roads.
  9. Appropriate runoff and erosion control measures such as water bars, berms, and interceptor ditches will be installed as necessary. Reviews of erosion control structures, culverts, reclamation, etc., will be made by Operator and BLM personnel to assure compliance with specified plans and goals.
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10. All drainage crossing structures will be designed to carry at least a 10-year/24-hr storm event, pursuant to guidelines in BLM Manual, Section 9113 (BLM 1985, 1991a).
  11. Operators will place topsoil or other suitable growth material over all disturbed surfaces prior to revegetation and disturbed site revegetation will be initiated as soon as practical following disturbance.
  12. Operators' will adhere to measures specified in Spill Prevention, Control, and Countermeasure (SPCC) Plans. Any accidental soil contamination by spills of petroleum products or other hazardous materials will be cleaned up and the soil disposed of or rehabilitated.

### **Water Resources**

1. Erosion-prone (e.g., drainages) or high-salinity areas will be avoided where possible, and necessary construction in these areas will be done in the late summer, fall, and winter (prior to soil freezing), to avoid runoff periods. Proper containment of oil and produced water in tanks, drilling fluids in reserve pits, and the location of staging areas for storage of equipment away from drainages will prevent potential contaminants from entering surface waters.
  2. Prudent use of erosion control measures, including diversion terraces, riprap, matting, temporary sediment traps, and water bars will be employed as necessary. Interceptor dikes will be used to control surface runoff generated at well locations, and dike location and construction methods will be described in APD and ROW plans. If necessary to reduce suspended sediment loads and remove potential contaminants, Operators will treat diverted water in detention ponds prior to release to meet applicable state or federal standards. If water is discharged into an established drainage channel, the rate of discharge will not exceed the capacity of the channel to convey the increased flow. Waters that do not meet applicable state or federal standards will be evaporated, treated, or disposed of at an approved disposal facility.
  3. Construction at drainage crossings will be limited to periods of low or no flow.
  4. Operators will follow all practical alternatives and designs to limit disturbance within drainage channels, including ephemeral and intermittent draws.
  5. Channel crossings by pipelines will be constructed so that the pipe is buried at least 4 ft below the channel bottom.
  6. Channel crossings by roads and pipelines will be constructed perpendicular (at right angles) to flow so as to minimize disturbance. If channels will be crossed by roads, culverts will be installed at all appropriate locations as specified in BLM Manual 9112 - *Bridges and Major Culverts* (BLM 1990b), and Manual 9113 - *Roads* (BLM 1985, 1991a). All stream crossing structures will be designed to carry the 25-year discharge event or other capacities as directed by BLM.
  7. Disturbed channel beds will be reshaped to their approximate original configuration.
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8. All disturbances to wetlands and/or other waters of the U.S. will be coordinated with the U.S. Army Corps of Engineers (COE), and Section 404 permits will be secured as necessary prior to disturbance.
  9. A 500-ft wide buffer area of undisturbed land will be left between construction sites and wetland/riparian areas, perennial channels, or open water areas, where practical.
  10. A 100-ft wide buffer area of undisturbed land will be left between construction sites and ephemeral and intermittent channels, where practical.
  11. All reserve pits will be constructed in cut or stabilized fill material.
  12. Subsurface material in all reserve pits will be inspected during construction by BLM as deemed necessary to assess stability and permeability to determine the need for pit reinforcement or lining. If directed by the BLM and/or the WOGCC, a synthetic liner will be installed.
  13. Reserve pits that contain materials potentially hazardous to the environment (BLM 1998a) will be lined if they are located at sites where groundwater occurs within 50 ft of the surface or where potential ground or surface water could be contaminated.
  14. If reserve pit leakage is detected, reserve pit use at the site will be curtailed as directed by the BLM until the leakage is corrected.
  15. All reserve pits will be designed with at least 1.0 ft of freeboard. Operators will construct reserve pits with 2 ft of freeboard in cut areas or in compacted and stabilized fill. Subsoil material stability and permeability in the area of construction will be evaluated and the need for pit reinforcement assessed. The subsoil material at proposed pit locations will be inspected to assess soil stability and permeability and whether reinforcement and/or lining are required. Prior to installation of reserve pit liners and/or fluids, reserve pits will be inspected by BLM personnel as deemed necessary. Earthen reserve pits will be used only after evaluation of the pit location for distance to surface waters, depth to useable groundwater, soil type and permeability, and the fluids which will likely be retained in the pit.
  16. All water used in association with this project will be obtained from Wyoming State Engineer's Office (WSEO)-permitted groundwater wells, or other existing and authorized sources; no new water withdrawals from the Green River System are proposed.
  17. The discharge of all water (hydrostatic test water, stormwater, produced water) will be done in conformance with WDEQ/Water Quality Division (WQD) (1993), BLM Onshore Oil and Gas Order No. 7, and WOGCC (1992) rules and regulations.
  18. Concentrated water flows within access road ROWs will be managed utilizing best management practices.
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19. Operators will prepare SWPPPs for all disturbances greater than 5 acres in size as required by WDEQ National Pollutant Discharge Elimination System (NPDES) permit requirements. In some instances, SWPPPs for groups of wells may be developed.
  20. Operators will prepare and implement SPCC Plans, where applicable, in accordance with 40 C.F.R. 112. Any spill or accidental discharge of hazardous material will be remediated. Operators will conduct an orientation for project personnel to ensure they are aware of the potential impacts that can result from accidental spills and that they know the appropriate recourse if a spill occurs.
  21. BLM and/or WOGCC casing and cementing criteria will be followed to protect all subsurface mineral-bearing and useable water-bearing zones. Unproductive wells and wells that have completed their intended purpose will be properly plugged and abandoned using procedures identified by the WOGCC and the BLM.
  22. To mitigate potential impacts caused by flooding during the LOP, construction in flood-prone areas will be limited to late summer, fall, or winter when conditions are generally dry and flows are low or nonexistent. Additional mitigation to lessen any impacts from flooding or high flows during and after construction will include the avoidance of areas with high erosion potential (i.e., steep slopes, floodplains, unstable soils); reestablishment of existing contours where possible; avoidance of areas within 500 ft of wetland edges, riparian areas, and open water, where possible; avoidance of areas within 100 ft of ephemeral and intermittent drainages, where possible; and implementation of appropriate erosion and sediment control and revegetation procedures.
  23. Increased sedimentation impacts to surface waters will be avoided or minimized through construction and erosion control practices approved with each authorization and through the prompt reclamation of disturbances.

### **Noise and Odor**

1. Noise mitigation will be applied at well locations, as determined necessary on a case-by-case basis by the BLM.
  2. All engines and compressor exhaust stacks will be properly muffled with industrial grade silencers and maintained according to manufacturers' specifications.
  3. Construction, drilling, completion, testing, and production facility installation activities will be seasonally restricted in crucial big game winter ranges, proximal to active raptor nests during the nesting period, and in sage grouse breeding and nesting areas (see Section 2.1.13.9 of the EA for appropriate distances).
  4. Road use and travel pattern specifications will be designed, in part, to keep traffic to a minimum and to reduce noise impacts.
  5. Housing for compressors and silencers on exhaust stacks may be used if noise from compressor stations is shown to be a problem (e.g., sage grouse strutting activity is affected).
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**Vegetation**

1. As mutually agreed upon between Operators and the BLM, site-specific surveys for SSPS will be conducted prior to any surface disturbance in areas determined by the BLM to contain potential habitat for such species (BLM Directive USDI-BLM 6840). Project facilities will be relocated to avoid SSPS, and their habitat will be avoided, where practical. Surveys will be completed by a qualified botanist as authorized by the BLM, and may be financed by Operators, and the botanist will comply with BLM's SSPS survey policy requirements. If any SSPS or their habitats are found, BLM recommendations for avoidance or mitigation will be implemented.
  2. Herbicide applications will be kept at least 500 ft from known SSPS populations or other distance deemed safe by the BLM.
  3. Removal or disturbance of vegetation will be kept to a minimum through construction site management (e.g., using previously disturbed areas and existing easements, limiting equipment/materials storage yard and staging area sizes, scalping, etc.). Well locations and associated roads and pipelines will be located to avoid or minimize impacts in areas of high value (e.g., SSPS habitats, wetland/riparian areas).
  4. Operators will seed and stabilize disturbed areas in accordance with the reclamation guidelines presented in the GRRR RMP (BLM 1992:Appendix 7.2). Revegetation using a BLM-approved, locally adapted seed mixture containing native grasses, forbs, and shrubs will begin in the first appropriate season following disturbance, and vegetation removed will be replaced with plants of equal forage value and growth form using procedures that include:
    - fall reseeded (September 15 to freeze-up), where feasible;
    - spring reseeded (post-thaw and prior to May 15) if fall seeding is not feasible;
    - deep ripping of compacted soils prior to reseeded;
    - surface pitting/roughening prior to reseeded;
    - utilization of native cool-season grasses, forbs, and shrubs in the seed mix;
    - appropriate, approved weed-control techniques;
    - broadcast or drill seeding, depending on site conditions; and
    - fencing of certain sensitive reclamation sites (e.g., riparian areas, steep slopes, and areas within 0.5 mi of livestock watering facilities) as determined necessary through monitoring.
  5. Recontouring and seedbed preparation will occur immediately prior to reseeded on the unused portion of well locations and road ROWs and entire pipeline ROWs outside of road ROWs. In the event of uneconomical wells, Operators will initiate reclamation of the entire well location, access road, and adjacent disturbed habitat as soon as possible. Reclamation will be monitored by the Operators and the BLM to determine and ensure successful establishment of vegetation.
  6. Operators will monitor for noxious weeds and will apply BLM-approved weed control techniques, as necessary. Weed-free certification by county extension agents will be required for grain or straw used for mulching revegetated areas. Gravel and other surfacing materials used for the project will be free of noxious weeds.
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7. Per COE requirements, Operators will identify all waters of the U.S., special aquatic sites, and wetlands that could be impacted by the proposed project. All project activities will be located outside of these sensitive areas, where practical.
  8. Where wetlands, riparian areas, streams, or ephemeral/intermittent stream channels must be disturbed, COE Section 404 permits will be obtained as necessary, and the following measures will be employed.
    - a. Wetland areas will be crossed perpendicular to flow during dry conditions (i.e., late summer, fall, or dry winters); winter construction activities will occur only when topsoil can be segregated and stockpiled separately from the subsoil.
    - b. Streams, wetlands, and riparian areas disturbed during project construction will be restored to pre-project conditions and, if impermeable soils contributed to wetland formation, soils will be compacted to reestablish impermeability.
    - c. Wetland topsoil will be selectively handled.
    - d. Recontouring and BLM-approved species will be incorporated into reclamation procedures.
    - e. Reclamation activities will begin on disturbed wetland areas immediately after completion of project activities.
  9. Well field traffic will be confined, unless specifically authorized otherwise, to the running surface of roads and well pads as approved in APDs and ROWs.

**Wildlife and Fisheries**

1. Well locations, access roads, pipelines, and ancillary facilities will be selected and designed to minimize disturbances to areas of high wildlife habitat value, including wetlands and riparian areas.
  2. Removal or disturbance of vegetation will be minimized through construction site management (e.g., by utilizing previously disturbed areas, using existing ROWs, designating limited equipment/materials storage yards and staging areas, scalping).
  3. To minimize wildlife mortality due to vehicle collisions, Operators will advise project personnel regarding appropriate speed limits in the project area, and roads will be reclaimed as soon as possible after they are no longer required. Some existing roads in the area may be closed and reclaimed by Operators as authorized by the BLM. Employees and contractors will be informed about wildlife laws and, if violations are discovered, the offending employee or contractor may be disciplined and/or dismissed by Operators and/or prosecuted by the WGFD.
  4. To protect wildlife habitat, project-related travel will be restricted to established project roads; no off-road travel will be allowed, except in emergencies.
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5. Potential impacts to fisheries will be minimized by using proper erosion control techniques (e.g., water bars, jute netting, rip-rap, mulch). Construction within 500 ft of open water and 100 ft of intermittent or ephemeral channels will be avoided, where practical. Channel crossings for roads and pipelines will be constructed when flows are not expected (i.e., late summer or fall). All necessary crossings will be constructed perpendicular to flow. No surface or shallow groundwater in connection with surface water will be utilized for the proposed project.
  6. Operators will not perform construction activities in big game crucial winter ranges from November 15 to April 30 unless specifically allowed by the BLM.
  7. Wildlife-proof fencing will be constructed around areas potentially hazardous to wildlife (e.g., reserve pits, toxic material storage locations) as deemed necessary by the BLM.
  8. Wildlife-proof fencing will be utilized on reclaimed areas if it is determined that wildlife species are impeding successful vegetation re-establishment.
  9. ROW fencing associated with this project will be kept to a minimum and fences, where necessary, will meet BLM and WGFD standards for facilitating wildlife passage.
  10. Reserve, workover, and evaporation/production pits potentially hazardous to wildlife will be adequately protected by fencing and/or netting to exclude wildlife and ensure protection of migratory birds and other wildlife, as directed by the BLM.
  11. Operators will implement policies designed to control littering by notifying all employees and contractors that any littering within the VBPA could result in dismissal.
  12. Operators will internally enforce existing drug, alcohol, and firearms policies, and firearms and dogs will not be allowed on-site during working hours.
  13. Any power line construction will follow recommendations by the Avian Power Line Interaction Committee (1994, 1996) and Olendorff et al. (1981) to avoid collisions and electrocution of raptors and other avifauna.
  14. USFWS and WGFD consultation and coordination will be conducted as necessary for all mitigation activities related to raptors and TEP&C species (and their habitats), and all permits required for movement, removal, and/or establishment of raptor nests will be obtained.
  15. In addition, the following raptor nest avoidance measures will be applied as directed by BLM.
    - Well locations, pipelines, and associated roads will be selected and designed to avoid disturbances to known raptor nest sites.
    - Raptor nest surveys will be conducted within a 1.0-mi radius of proposed surface use or activity areas if such activities are proposed to be conducted between February 1 and July 31.
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- All surface-disturbing activity (e.g., road, pipeline, well pad construction, drilling, completion, workover operations) will be seasonally restricted from February 1 through July 31 within a 0.5-mi radius of all active raptor nests, except ferruginous hawk nests, for which the seasonal buffer will be 1.0 mi. (An active raptor nest is defined as a nest that has been occupied within the past 3 years.) The seasonal buffer distance and applicable exclusion dates may vary, depending on such factors as the activity status of the nest, species involved, prey availability, natural topographic barriers, line-of-site distance(s), and other conflicting issues such as cultural values, steep slopes, etc. Routine maintenance or emergency health and safety activities will be allowed on existing well locations.
  - Well locations, roads, ancillary facilities, and other surface structures requiring repeated human presence will not be constructed within 825 ft of active raptor nests, where practical. Facility construction in these areas will require specific approval from the BLM.
  - Operators will notify the BLM immediately if raptors are found nesting on project facilities and will assist the BLM as necessary to erect artificial nesting structures. Additional site-specific mitigations for nesting raptors will be designed, as necessary, in consultation with the BLM, USFWS, and WGFD.
16. Operators will not conduct surface-disturbing activities requiring repeated human presence within 0.25 mi of active sage grouse leks. Permanent high-profile structures such as buildings and storage tanks will not be constructed within 0.25 mi of an active lek.
  17. If, during on-site reviews conducted during the sage grouse nesting season (April 1-July 31) by a qualified biologist prior to the start of activities in potential sage grouse nesting habitat up to 2.0 mi from active leks, an active sage grouse nest is identified, surface-disturbing activities will be delayed until nesting is completed.
  18. As mutually agreed upon between Operators and the BLM, site-specific surveys for TEP&C species and other BLM SSAS will be conducted prior to surface disturbance in areas determined by the BLM to contain potential habitat for such species. These surveys will be completed by a qualified biologist as authorized by the BLM and may be financed by Operators. Surveys will focus on species known to occur on the VBPA, as well as those potentially occurring in the area. If any TEP&C or SSAS are found in the area, BLM recommendations for avoidance will be implemented. Habitat where candidate or other SSAS are likely or are known to occur would be avoided, where practical, through minor relocation of project facilities.
  19. Mountain plover surveys will not be conducted for construction activities planned for the period of July 11 through April 9. However, in the event the bird is listed under the ESA, surveys would be implemented prior to disturbance regardless of when disturbance actions would occur, and informal consultation with the USFWS would be initiated.
  20. Disturbance in mountain plover habitats (i.e., active prairie dog towns and areas with vegetation less than 4 inches in height [cushion plant and Gardner's saltbush
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communities]) will be avoided where practical, and where these habitats will be disturbed, reclamation will utilize procedures designed to re-establish suitable mountain plover habitat as directed by the BLM. Furthermore, mountain plover surveys will be conducted prior to disturbance within identified plover habitat on or within 200 m (656 ft) of areas proposed for development during the forthcoming year by a qualified biologist in accordance with USFWS guidelines (USFWS 1999b) as follows:

- surveys will be conducted during early courtship and territory establishment;
  - surveys will be conducted from sunrise to 10:00 a.m. and/or from 5:30 p.m. to sunset;
  - surveys will be conducted from four-wheel-drive vehicles or, where access is a problem and/or no visual observations are made from vehicles, ATVs will be used;
  - surveyors will remain in or close to vehicles when scanning with binoculars and/or spotting scopes;
  - sites will be surveyed three times during the survey window (May 1-June 15), with each survey separated by at least 14 days;
  - surveys will not be conducted in inclement weather (e.g., poor visibility);
  - surveys will focus on locating displaying or calling males;
  - if breeding birds are observed, additional surveys will be implemented immediately prior to construction to search for active nest sites;
  - if an active nest is located, a 200-m (656-ft) buffer zone will be established around the nest to prevent direct and indirect nest disturbance; and
  - surface-disturbing activities will occur as near to completion of surveys as possible.
21. If an active nest is found in the survey area, planned activities will be delayed 37 days, or 1 week post-hatching, or if a brood of flightless chicks is observed, activities will be delayed at least 7 days.
  22. Where access roads and/or well locations have been constructed prior to the mountain plover nesting season (April 10- July 10) and use of these areas has not been initiated for development actions prior to April 10, a BLM-approved biologist will conduct site investigations of these disturbed areas prior to use to determine whether mountain plover are present. In the event plover nesting is occurring, Operators will delay development activities until nesting is complete.
  23. Where development activities are occurring within 0.25 mi of nesting areas, nest success and productivity of known mountain plover nests found within these areas will be monitored and reported to the BLM and USFWS Wyoming Field Office annually.
  24. Prior to implementing surface disturbance within 200 m (656 ft) of known mountain plover concentration areas (i.e., areas where broods and/or adults have been observed in the current year or documented in at least 2 of the last 3 years), Operators will consult with the BLM regarding initiation of informal conferencing with the USFWS.
  25. If removal of mountain plover nesting habitat is unavoidable, loss will be minimized by creating additional nesting habitat; it is assumed that many of the existing and proposed pipeline reclamation areas on the VBPA will provide suitable plover breeding habitats.
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26. If nesting habitat is disturbed, these disturbed areas will be reclaimed to approximate original conditions (e.g., topography, vegetation, hydrology) after completion of activities in the area.
  27. Where possible, proposed disturbance sites will be located to avoid prairie dog colonies which meet black-footed ferret habitat size and burrow density criteria (USFWS 1989).
  28. The proposed project will not utilize any surface water or shallow groundwaters that are connected to live surface waters.
  29. Pursuant to the ESA, Operators will adhere to all survey, mitigation, and monitoring requirements identified in the BA for this project.
  30. Operators would provide to field personnel USFWS educational materials illustrating and describing the mountain plover, its habitat needs, life history, threats, and gas development activities that may lead to incidental take of eggs, chicks, or adults.
  31. All suspected observations of mountain plover adults, eggs, chicks, or carcasses on the VBPA, however obtained, would be promptly reported to:
    - Wildlife Biologist, BLM,  
Jim Dunder, (307) 352-0315  
Vicki Herren, (307) 352-0236  
Rock Springs Field Office  
280 Highway 191  
Rock Springs, WY 82901
    - Field Supervisor or Designee, USFWS  
(307) 772-2374  
Wyoming Field Office  
4000 Airport Parkway  
Cheyenne, WY 82001

Observations would include a description including what was seen, time, date, exact location, and observer's name, address, and telephone number. Carcasses or other suspected mountain plover remains would be collected by BLM or USFWS employees and deposited with the USFWS's Wyoming Field Office.

32. Between April 10 and July 10, vehicle travel (excluding vehicles necessary for facility site location surveys) would be restricted to existing roads, trails, and well pads, unless first cleared by surveys consistent with the Plover Guidelines. Results of all plover surveys would be reported to the USFWS's Wyoming Field Office.

### **Cultural and Historic Resources**

1. Operators will inform their employees and contractors about the relevant federal regulations protecting cultural resources. If any cultural resources subject to the NHPA or the ARPA are discovered during exploration and/or construction within the VBPA, activities shall immediately cease and the BLM will be notified.
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2. Operators will adhere to the NCPA and WSP prior to any surface-disturbing activity.
  3. Operators will halt construction activities in potentially affected areas if previously undetected cultural resources are discovered during construction. The BLM will be notified immediately and BLM would initiate consultation with SHPO concerning proper evaluation and stabilization measures pursuant to the WSP under the NCPA. Construction will not resume until a Notice to Proceed is issued by the BLM.
  4. If areas of traditional cultural properties, or other sensitive Native American areas are identified in affected areas, BLM and affected tribes will identify potential impacts. BLM will determine appropriate management on a case-by-case basis. Operators may participate in the consultation process; however, responsibilities rest with BLM and tribes to consult on a government-to-government basis.
  5. Provisions similar to those of the *Oregon/Mormon Pioneer National Historic Trails Management Plan* (BLM 1986a) and updated *Management Plan and Use Plan Update/Final Environmental Impact Statement: Oregon/Mormon National Historic Trails* (National Park Service [NPS] 1999) will be followed for any actions potentially affecting the Cherokee Trail or contributing portions of the Rock Springs to Browns Park Road and Rock Springs to Hiawatha Road.
  6. Operators will pay the costs of BLM-required mitigation for cultural resources caused by Operators during project construction.

### **Socioeconomics**

1. Operators will implement hiring policies that encourage the use of local or regional workers.
2. Operators will schedule concentrations of project traffic, such as truck convoys or heavy traffic flows, to avoid periods of expected heavy traffic flows associated with recreation. Travel and parking will be restricted to access roads and on-site parking areas.
3. Where practical, Operators will plan proposed development operations so that seasonal restrictions do not create a significant reduction in the level of development, thus causing seasonal workforce layoffs (i.e., work continues at a level rate year round).

### **Livestock/Grazing Management**

1. Operators will coordinate project activities with ranching operations to minimize conflicts with livestock movement or other ranch operations.
  2. Operators will repair all fences, cattle guards, and other livestock-related structures damaged during project construction.
  3. In areas of high livestock use, reclaimed areas will be fenced as necessary to ensure successful vegetation establishment.
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4. Reclamation of nonessential areas disturbed during construction activities will be accomplished in the first appropriate season after well completion. Nonessential areas include portions of the well locations not needed for production operations, the borrow ditch and outslope portions of new road ROWs, entire pipeline ROWs outside of road ROWs, and all roads and associated disturbed areas at nonproductive well locations. Operators will repair or replace fences, cattleguards, gates, drift fences, and natural barriers that are damaged by development actions to maintain current BLM standards. Cattleguards will be used instead of gates for livestock control on most road ROWs. Livestock will be protected from pipeline trenches and livestock access to existing water sources will be maintained.
  5. The BLM, Operators, and livestock permittees will monitor livestock movements, especially regarding any impacts to livestock from roads or disturbance from construction and drilling activities. Appropriate measures will be taken to correct any adverse impacts, should they occur.
  6. All pits containing fluids will be fenced to keep livestock from drinking any contaminated water.

**Land Status/Use**

1. Mitigation to prior rights will include:
  - limiting drilling operations to lands leased or owned by the Operators;
  - locating wells away from known underground cables;
  - regrading and repairing roads, as necessary, in areas damaged by project activities;
  - reestablishing a level compacted surface where pipelines cross existing roads;
  - identifying and flagging in advance of all existing ROWs that will be crossed by proposed pipelines and roads;
  - backhoe and hand excavating at pipeline crossings until the exact locations of existing underground lines have been determined; and
  - restoring native vegetation as soon as practical.
2. Roads and pipelines will be located adjacent to existing linear facilities wherever possible.

**Recreation**

1. Operators will post appropriate warning signs and require project vehicles to adhere to appropriate speed limits on project-required roads.
  2. Operators will inform their employees, contractors, and subcontractors that long-term camping (more than 14 days) on federal lands or at federal recreation sites is prohibited.
  3. Operators will direct their employees, contractors, and subcontractors to abide by all state and federal laws and regulations regarding hunting and artifact collecting.
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**Transportation**

1. Detailed practices and procedures will be developed to identify the minimum road network required to support annually proposed project activities, as well as construction and maintenance responsibilities of the Operators. Dust abatement, road construction, and surfacing requirements will also be identified annually.
2. Existing roads will be used to the maximum extent possible and upgraded as necessary.
3. All Operator-constructed roads not required for routine operation and maintenance of producing wells or ancillary facilities will be reclaimed as directed by the BLM, State Land Board, or private landowner. As necessary, these roads will be permanently blocked, recontoured, reclaimed, and revegetated by Operators, as will disturbed areas associated with permanently plugged and abandoned wells. Reclamation of existing two-track roads will be considered on a case-by-case basis.
4. Where required by the BLM, site-specific centerline surveys and/or detailed construction designs will be submitted to and approved by the BLM prior to road construction.
5. Operators will comply with existing federal, state, and county requirements and restrictions to protect road networks and the traveling public.
6. Special arrangements will be made with the Wyoming Department of Transportation (WDOT) to transport oversize loads to the VBPA. Otherwise, load limits will be observed at all times to prevent damage to existing road surfaces.
7. All development activities along approved ROWs will be restricted to areas authorized in the approved ROW.
8. Operators will be responsible for maintenance of roads in the project area and for closure of roads following production activities.
9. Where proposed roads will follow existing roads, those portions of existing roads not included in the new ROW will be reclaimed and revegetated by the Operator.
10. Up to 12 inches of available topsoil will be stripped from all road corridors prior to construction and will be redistributed and reseeded on backslope areas of the borrow ditch after completion of road construction. Borrow ditches will be reseeded in the first appropriate season after initial disturbance.
11. Any new access roads from WY-430 will be paved within the WY-430 ROW and graveled for 0.5 mi from the WY-430 ROW boundary to minimize the amount of mud carried onto the paved highway.

**Visual Resources**

1. Operators will utilize existing topography to screen roads, pipeline corridors, drill rigs, wells, and production facilities from view where possible.
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2. Operators will paint all aboveground production facilities with appropriate colors (e.g., Carlsbad Canyon or Desert Brown) to blend with the adjacent terrain, except for structures that require safety coloration in accordance with Occupational Safety and Health Administration (OSHA) requirements.

### **Health and Safety/Hazardous Materials**

1. Operators will utilize WDEQ-approved portable sanitation facilities at drill sites.
  2. Operators will utilize appropriate signage as required by law.
  3. Operators will place appropriate dumpsters at each construction site to collect and store garbage and refuse.
  4. Operators will ensure that all refuse and garbage is transported to a State of Wyoming-approved sanitary landfill for disposal.
  5. Each Operator will institute a Hazard Communication Program for its employees and will require subcontractor programs in accordance with OSHA (29 C.F.R. 1910.1200).
  6. Operators and/or their contractors will keep on file, at their respective offices, Material Safety Data Sheets (MSDSs) for every chemical or hazardous material that is brought on-site in accordance with 29 C.F.R. 1910.1200.
  7. SPCC Plans will be written and implemented where applicable in accordance with 40 C.F.R. 112.
  8. Chemical and hazardous materials will be inventoried and reported in accordance with the regulations implementing *Superfund Amendments and Reauthorization Act (SARA)* Title III (40 C.F.R. 335). If quantities exceeding 10,000 pounds or the threshold planning quantity (TPQ) are to be produced or stored, the appropriate Section 311 and 312 forms will be submitted at the required times to the State and County Emergency Management Coordinators and the local fire departments.
  9. Any hazardous wastes, as defined by the *Resource Conservation and Recovery Act of 1976 (RCRA)*, as amended, will be transported and/or disposed of in accordance with all applicable federal, state, and local regulations.
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**APPENDIX C:**  
ADDITIONAL BLM-REQUIRED MITIGATION

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**APPENDIX C:  
ADDITIONAL BLM-REQUIRED MITIGATION**

The following additional mitigation measures were identified during the analysis (Chapter 4 of the EA) and will be applied by the BLM during the permitting process for individual project components as deemed necessary by the BLM to further reduce adverse impacts upon the environment. Furthermore, additional site-specific mitigation measures may be identified and applied during APD and ROW application reviews.

Implementation of these measures on state and private lands will be subject to state or landowner preferences and agreements with individual Operators. All existing lease stipulations will be applied on applicable VBPA leases. Development activities on all lands will be conducted in accordance with all appropriate federal, state, and county laws, rules, and regulations.

Some of the measures identified below have been modified slightly to better clarify the conditions under which they may be applied. Only those resource values where additional mitigation was identified during the analysis are included; however, to eliminate duplication, the additional mitigation measures identified below may be applied for more than one resource. In addition, measures that duplicate those identified as Operator-committed measures (see Appendix B) are eliminated from this section.

**Air Quality**

1. The WDEQ/AQD may require additional air quality analysis as part of the permitting process for additional compression and/or well location development, and the BLM may require copies of the results of these analyses as part of the APD or ROW process. Furthermore, the BLM may require Operators to conduct emissions checks on all internal combustion engines.

**Topography and Physiography/Mineral Resources/Soils**

2. Disturbance from gravel pits may be limited to 5.0 acres at any one time.

**Soils**

3. Development of an Erosion Control, Revegetation, and Restoration Plan (ECRRP) for each APD identifying steep slopes, erosive soils, and/or saline/alkaline soils may be required to specify the reclamation procedures necessary to minimize the adverse impacts that such conditions pose.
  4. BLM may require salvage of topsoil (up to 12 inches) from well pads, pipelines with trenches exceeding 18 inches in depth (at least over the trench and working side), and on all areas where grading may be required;
  5. Ripping, discing, or chiseling of all compacted surfaces to a depth of 18 inches may be required to reduce soil density and increase infiltration and root penetration.
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6. The BLM may require development and implementation of an upgrade schedule for all existing roads, with maintenance responsibilities to include, but not be limited to, grading, graveling, installing sediment control and runoff structures, and dust abatement measures to maintain all-weather drivability while minimizing erosion.
  7. Regular erosion monitoring in subwatersheds with the highest percentage of disturbance (see Table 4.2 in the EA) may be required, and if monitoring shows erosion beyond natural rates, Operators may be required to coordinate with the BLM to further mitigate erosion.
  8. BLM may require road crossings and culverts be designed to mitigate concentrated runoff and to reduce runoff velocity and these designs may require the armoring of all culvert outlets, the diversion of downslope runoff from roads with water diversion ditches, and the use of erosion control matting or other soil stabilizing methods on steeper disturbed slopes and road cuts.
  9. During interim reclamation on producing locations, well pads will be reclaimed as close as possible to the original contours.
  10. Cut-and-fill slopes will be reduced to a 3:1 slope or less where feasible.
  11. Cut-and-fill slopes and topsoil stockpiles will be seeded as soon as practicable after the dirt work is completed.
  12. Topsoil stockpiles may not be higher/deeper than 6 ft.
  13. The BLM may require producing locations have zero runoff until adjacent disturbed areas are revegetated so as to avoid contamination and sedimentation downstream.
  14. All unused portions of the location may require recontouring and the topsoil to be respread.
  15. Fencing of well pads for interim reclamation at a producing well, permanent reclamation at an abandoned and plugged well, and buried pipeline drainage crossings may be necessary until vegetation is established.
  16. Berms will not be allowed over pipelines in anticipation of subsidence (berms tend to concentrate runoff leading to gully formation).
  17. The option of using surface pipelines in selected areas will be considered, especially for lines with a diameter of 4 inches or less.
  18. BLM may require that all temporary water supply pipelines be located within road or gathering system pipeline ROWs.

### **Water Resources**

19. The BLM may require the lining of all reserve pits and some or all tank batteries.
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20. Operators, in cooperation with BLM, will identify source areas and associated structural controls (stratigraphically or fault controlled) for areas where springs and seeps occur within 0.25 mi of a well bores during APD on-site inspections.
  21. Well locations will be situated outside of spring and seep source areas, where practical.
  22. Well locations will be located more than 500 ft from perennial drainages and 100 ft from intermittent/ephemeral drainages.
  23. Additional protection measures (e.g., disturbance acreage limitations, closed mud systems) may be required if well locations are built in spring/seep source areas.
  24. Operators will periodically monitor seep and spring flow rates and water quality if actions are occurring within source areas.

**Vegetation/Wetlands**

25. The BLM may request Operator assistance in monitoring reclaimed areas, and may require that all temporary water supply pipelines be located within road or gathering system pipeline ROWs.

**Wildlife/Fisheries**

26. As deemed appropriate by the BLM in consultation with the WGFD, additional water sources (e.g., retention of project-developed water wells) may be developed by the Operators to increase seasonal use of the area by pronghorn and sage grouse, or to hold pronghorn on the VBPA for longer periods during seasonal movements to reduce foraging pressure on crucial winter habitats. To provide further protection for ferruginous hawks, the BLM may require an avoidance area of 1,000 ft from active ferruginous hawk nests.
  27. Inventory and monitoring of wildlife on the VBPA will be conducted by an Operator-financed, BLM-approved biologist as directed by the BLM and appropriate management decisions will be made to further protect wildlife and their habitats. The BLM may require sage grouse nest surveys prior to disturbance for developments proposed within sage grouse nesting habitat, and may require that permanent high-profile structures not be constructed within 0.25 mi of any leks (active or inactive). Any pits containing harmful fluids will be maintained in a manner to prevent migratory bird mortality.
  28. BLM may require Operators to post speed-limit signs at key areas within the VBPA to minimize the potential for collisions with wildlife.
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**Threatened, Endangered, Proposed, and Candidate Species**

29. The BLM may require black-footed ferret searches prior to development in accordance with USFWS guidelines (USFWS 1989) even though the project area is designated ferret-free.

**Cultural and Historic Resources**

30. Impacts to cultural resources will be avoided or mitigated following procedures specified in the national programmatic agreement for cultural resources and statewide protocol. Class I and Class III inventories will be conducted prior to disturbance on all federal lands and on state and private lands affected by federal undertakings. All resources identified during these inventories will be evaluated for eligibility for the National Register of Historic Places (NRHP) by the BLM, and SHPO will be consulted as necessary under the statewide protocol. If landowners deny access, alternative cultural resource mitigation resolution methodologies may be applied or the development may be denied. In selective areas identified by the BLM, cultural resource surveys may require testing and/or mitigation to determine significance. If any NRHP-eligible or -listed sites found within the area of potential effect cannot be avoided, a data recovery program or other mitigation will be implemented as deemed appropriate by the BLM in consultation with SHPO as necessary, and the Operators.
  31. If a large number of sites cannot be avoided or other adverse effects could occur, a programmatic agreement among the aforementioned parties may be developed. Programmatic agreements will usually be in place when properties are subjected to mitigation through data recovery. Additionally, programmatic agreements and/or discovery plans may be required to be in place prior to approval of APDs or ROW applications in areas with high densities of cultural resource sites which may occur along culturally sensitive areas such as Vermillion Creek.
  32. Construction activities in areas where the BLM believes there is a high potential for buried cultural deposits may be monitored by a BLM-permitted archaeologist. If historic or prehistoric materials are discovered during construction, further surface-disturbing activities at the site (in an area defined by the Authorized Officer) will cease immediately, and appropriate BLM personnel will be notified by the Operators to assure proper handling of the discovery by qualified archaeologists. An evaluation will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural resources. Operators may be responsible for the cost of site evaluation and stabilization.
  33. The BLM may require that all field personnel be informed by Operators of the importance of cultural resources and the regulatory obligations to protect such resources. Any cultural resource (historic or prehistoric site or object) discovered on public land by the Operators or any person working on their behalf will be immediately reported to the Authorized Officer. The BLM may require Operators to instruct field personnel not to disturb cultural resource sites or collect artifacts and that disturbance and collection of cultural materials is prohibited by law.
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34. The BLM may require that a 2-mi wide protective management corridor be established along the general route of the Cherokee Trail until the exact trail route is identified in a single comprehensive study. The study may be funded by the Operators and use aerial reconnaissance to identify and mark the trail. Once marked, the BLM, in consultation with SHPO, may implement other less restrictive management measures.

### **Landownership and Use**

35. The BLM may require that roads on federal lands be designed by a licensed, professional engineer, and where proposed roads will follow existing roads, those portions of existing roads not included in the new road ROW and not needed by other area users may be reclaimed and revegetated by the Operators following Class III cultural resource surveys. In addition, the BLM may require the construction of adequate turnouts on new crown-and-ditch roads to provide access from these new roads to existing two-tracks and other undeveloped roads, and may limit resource road disturbance area widths to 40 ft or less. Should old, existing roads (pre-FLPMA) be identified for reclamation, appropriate clearances may be needed to prevent unnecessary damage to important resources values (i.e., cultural). BLM and/or the Operators would assume the cost of such clearances depending upon the individual circumstance (existing vs. authorized ROW).
36. Fencing could be required by the BLM to keep livestock away from any pits containing fluids to prevent ingestion of contaminated water.

### **MEASURES NOT ADOPTED AS PART OF THE DECISION AND RATIONALE**

Two potential measures identified in Chapter 4 of the EA were deemed to be unnecessary. These include the following items and an explanation (*in italics*).

1. Drilling and/or fracturing fluids be hauled from locations and reused for drilling or fracturing another well.

*This practice is seldom used and would require specific approval by BLM.*

2. All fracturing fluids flowed-back to the surface be contained in tanks prior to removal from the location.

*The regulations allow for fracturing fluids to be drained into the reserve pit once hydrocarbons are removed.*

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